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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,508	03/10/2006	Liping Zhang	63261A	7832
35503	7590	02/13/2009		
Union Carbide Chemicals and Plastics Technology Corporation P.O. Box 1967 Midland, MI 48641-1967			EXAMINER	
			DENTZ, BERNARD I	
			ART UNIT	PAPER NUMBER
			1625	
			MAIL DATE	DELIVERY MODE
			02/13/2009 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/571,508

**Applicant(s)**

ZHANG ET AL.

**Examiner**

Bernard Dentz

**Art Unit**

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date 7-3-2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Thorsteinson et al, EP 425020 B1 cited by applicants. It discloses a process for epoxidation of ethylene to ethylene oxide using the same procedure of claim 1. A high Ag content catalyst is highlighted. That is the same chlorine containing component and nitrogen containing compounds as disclosed in claim 1 are added to the feed and the catalyst which contains silver on an inert, refractory solid support along with an efficiency enhancing salt of a member of a redox-half reaction pair. See par. [0084] to [0093] for the feed contents and note that the amounts satisfy the ratio in the instant claims. See par. [0066] for disclosure of the redox-half reaction pair. Preferably used are KNO<sub>3</sub> and KNO<sub>2</sub> and Rb salts are also disclosed. Alpha-alumina having a morphology comprising interlocking platelets is a preferred support. See [0034] to [0038].

The concentration of CO<sub>2</sub> recited in claim 1 is met at [0093]. The conditions I and II in Table 3 both meet condition D) of claim 1. The temperature limitations of E0 in claim 1 are met in Table 3.

The wt. % silver in the catalyst recited in [0028] of 25-40% meets that recited in claim 3.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorsteinson et al, supra. The caveat apparently relating to an amount of ethylene oxide produced by the catalyst before the adjustment of each component of the gas phase promoter described in D) is made. From the data in the specification it is not seen that the range of 0.4 to 1.0 for the ratio of N\* to Z\* has any particular benefit for the

catalyst which has produced more than the amount of product recited in D). In any case the range is within that taught by the reference and has not been shown to have special significance.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by and also as being obvious under 35 USC 103 as being obvious over Thorsteinson et al, EP480537. It has a similar disclosure to the above patent the difference is that this patent highlights stability increasing compounds. See p. 7.

The last 2, lines of Ex. 1 (comparative) state that "the amounts of the nitric oxide and ethyl chloride are adjusted periodically to optimize catalyst activity and efficiency."

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated and also as being obvious under 35 U.S.C. 103 by Hayden et al, US 5,387,751. It has a similar disclosure to the above 2 patents. See col. 4, line 59 to col. 6, line 32 and Ex. 4 e.g.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants should show the calculations involved in obtaining the number in D) from that on p.12, line 33 of the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Dentz whose telephone number is 571-272-0683. The examiner can normally be reached on Mon-Fri from 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, can be reached on 571 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Bernard Dentz/

Primary Examiner, Art Unit 1625